



Social Protection Discussion Paper Series

Testing Vietnam's Public Safety Net

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October 2003

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Social Safety Net Primer Series

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Dominique van de Walle

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Social Safety Net Primer Series

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Abstract

An effective public safety net can be important in a poor transition economy such as Vietnam. Yet we know very little about the performance of existing public transfers as a safety net. Using panel data, the paper investigates whether Vietnam's main social welfare transfers promoted poor people out of poverty and whether they protected the non-poor from becoming poor. It also explores the role transfer programs played in the country's dramatic reduction of poverty in the 1990s. Counterfactual consumption levels without transfers allow for behavioral responses. The findings suggest that transfer programs helped few people escape poverty and protected even fewer from falling into poverty. The public safety net appears to have been largely irrelevant to the country's recent poverty reduction record.

Key words: Poverty, safety nets, Vietnam

JEL codes: I38, H53, O10

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Testing Vietnam's Public Safety Net

Dominique van de Walle

I Introduction

Vietnam has averaged yearly growth rates of 6 to 7 percent per capita since it began its reforms in the late 1980s. The country has also successfully spread the benefits of this growth in the form of a substantial reduction in poverty. By one well-accepted definition of the poverty line for Vietnam, the national headcount index declined from 58.2 percent in 1992 to 37.4 percent in 1998 and from 66.4 to 45.5 percent in rural areas (Glewwe et al. 2000).¹

Yet, as these numbers attest, Vietnam remains a poor country. The rural population continues to be primarily engaged in agriculture and to be vulnerable to numerous daily hazards, such as illness, crop and animal diseases, unfavorable climatic conditions and (increasingly), international price swings and trade restrictions. Occasionally — and some argue with increasing frequency — devastating shocks such as cyclones and severe flooding wipe out lives and livelihoods and the hope of escaping poverty (Beckman et al. 2002, Benson 1997).

In this context, there is a potential role for a public safety net. Vietnam boasts its fair share of public spending on transfers that might serve this role. The main question this paper tries to address is whether existing social welfare programs perform a genuine safety net function — recognizing that this involves both protection from poverty and promotion from poverty. In principle, a safety net can reduce poverty either by protecting non-poor people from becoming poor or by promoting poor people out of poverty (a distinction due to Drèze and Sen, 1989). How does Vietnam's existing safety net perform in both functions? With panel data, methods exist to address this question following Ravallion, van de Walle and Gautam (1995). The availability of the Vietnam

¹ First order stochastic dominance indicates robustness to choice of poverty line and poverty measure.

Living Standards Surveys (VLSS) for 1992/3 and 1997/8 allows comparisons over time including longitudinal comparison for the same households.

The paper applies panel data methods in studying Vietnam's safety net. This appears to be the first attempt to apply such methods to a developing country.² An earlier analysis of the incidence across households and communes of social welfare and poverty-related initiatives found generally poor targeting performance (van de Walle 2001). Yet, such a static incidence picture may be deceptive about the degree to which outlays, coverage, and changes over time, were perhaps correlated to poverty related shocks and changes in exogenous variables. The paper asks: Does the public safety net respond to changing household circumstances? Vietnam in the 1990s is an interesting setting for examining these issues. In addition to the continuing and (probably) enhanced exposure to uninsured risk in the transition period, there was more than a doubling of total spending on selected transfers between the two survey dates. The setting provides an interesting quasi-experiment in who benefited from the changes in outlays in a poor transition economy.

In exploring the dynamic performance of the safety net in Vietnam, a key concern is of how to define who is “poor.” In common with much of the literature on poverty in developing countries, the paper uses household consumption expenditure per capita as its welfare measure. This is a comprehensive consumption aggregate. However, to some extent, the observed household consumption data reflect existing public transfers. Ignoring this fact is clearly hazardous in attempting to draw conclusions about the counterfactual of what welfare would have been without transfers, and hence, about the incidence of transfers. The paper implements a method for dealing with this concern.

The next section provides an overview of what is known about the existing social protection and poverty programs in Vietnam. Section 3 discusses the data used for the analysis in this paper, while section 4 derives our indicator of welfare allowing for behavioral responses to public transfers to get at the counterfactual welfare indicator. Results on the degree of protection and promotion afforded by the existing social safety

² The only previous applications have been to Hungary (Ravallion et al, 1995) and Russia (Lokshin and Ravallion, 2000). Sumarto et al. (2003) propose a “dynamic benefit incidence” which differs from the present approach in that the concern is solely with how well programs target households from the point of view of both their initial welfare and the severity of a shock to their welfare.

net are examined in section 5. Section 6 concludes the paper.

II Public responses to poverty and risk in Vietnam

Vietnam has a panoply of social welfare programs and initiatives. This reflects a deep-seated and longstanding state ideology of combating inequality and raising the living standards of all its regions and people. It is also a reflection of the expectation that ideology has fomented among the population. Since it adopted the market economy, the regime's enduring legitimacy arguably rests on this political commitment and its perceived realization. In practice, however, the programs are often ad hoc, poorly funded, and largely reliant on scarce local resources.

During the cooperative and collective period, communes took the social and welfare needs of their members in hand. Education and health services were provided as well as assistance and social security when households faced difficult life-cycle changes and shocks (Kolko 1997; Glewwe and Litvack 1998). These services were largely financed by the cooperatives with some assistance from the central government.

After the cooperatives were disbanded in 1988, and following cuts in public social sector spending and various privatization and liberalization measures, much of the cost burden of obtaining such services shifted to households. Peasants are more likely to be relying on informal mechanisms to deal with shocks. So, though on average richer, it can be argued that they are also likely to be more vulnerable today (Kolko 1997; Glewwe and Litvack 1998).

User fees for health care services and all but primary schooling were introduced. Medical costs increased. Overall, the reforms have resulted in vastly increased total education and health out-of-pocket spending. These changes have raised concerns about access by the poor and the specter of rising social differentiation and income inequality. Such concerns have in turn led to attempts to redress rising inequalities. Targeted schooling fee exemptions were instituted, but give limited relief as fees account for only a small share of total school-related expenditures (Behrman and Knowles 1999). A compulsory health insurance scheme was introduced in 1993 to cover formal sector workers and current and retired civil servants. This was soon supplemented by another scheme that aims to extend coverage to students, agricultural and informal sector workers

on a voluntary basis. However, the better-off are found to be the main participants in the schemes (Wagstaff and Pradhan 2003). Poor households continue to be unlikely to be able to insure themselves against severe health shocks.

The social protection system that has evolved since decollectivization is composed of a number of different initiatives that are centrally mandated but locally implemented, often relying heavily on local resources.³ The *Social Security System* provides pensions and other employment-related social insurance payments such as for maternity and disability to formal sector workers. It has covered public servants and military personnel since 1947 and was extended to other formal sector employees in 1995 (MOLISA 1999). These social insurance payments are still heavily subsidized by the central budget though they are eventually meant to be funded exclusively from payroll taxes and employee contributions. An analysis of the VLSS 1998 reveals that payments go to members of households accounting for 11.2 percent of the population nationally, with greater coverage in urban (18.3%) than in rural areas (9.4%) as might be expected (van de Walle 2001). Incidence is also found to be pro-poor in urban areas but much less so in rural areas where per capita amounts received (per person) are also much smaller.

Social subsidy transfers are available to compensate and assist those who contributed and suffered from the wars — disabled veterans, relatives of dead soldiers, and others who contributed to the revolution — from the *Social Guarantee Fund for Veterans and War Invalids*. Others unable to support themselves — including the disabled, orphans and the elderly — are in theory granted social subsidy transfers under the *Social Guarantee Fund for Regular Relief*. But, here in particular, scarce central public resources imply that implementation and coverage ultimately depend in large part on local level governments and resources. Social subsidy transfers are often touted by the government as reaching the poor. Yet only 9.6 percent of the population are found to live in households who report receiving social subsidies nationally, and only slightly higher at 10.2 percent in rural areas. Payment amounts are highest for the poorest quintile in urban areas. But, there is little sign of targeting across the rest of the urban or rural distributions where little variation is evidenced in either percentages of recipients or amounts received (van de Walle 2001).

The central government also runs a *Contingency Fund for Pre-Harvest Starvation and Natural Disasters* whose role is to minimize the consequences of natural calamities and other emergencies by dispensing disaster relief to regions and households. Following local covariate shocks, relief is provided by district and provincial authorities with the frequent assistance of Vietnam's Red Cross and the mass organizations. Field studies indicate that emphasis is placed primarily on surviving the emergency and a common instrument is credit for disaster recovery (Beckman et al. 2001, Benson 1997). Because institutional capacity and finances are limited, the aid tends to be short of what would be necessary to get households back on their pre-crisis development path. Poor households in particular are prone to further impoverishment as a result (Beckman et al. 2001).

Finally, a number of *National Development Programs* which aim to reduce poverty have been introduced, though their focus is generally more on promoting growth than on providing protection. National programs cover employment generation, reforestation, school and health fee exemptions, micro-credit schemes and physical infrastructure investments. It is not clear whether education scholarships as reported in the VLSS 1998 are granted under one of the national programs or not. Relatively few appear to be allocated (the survey sample identifies 141), and incidence is clearly regressive (van de Walle 2001).

In 1996 the government proposed a national hunger elimination and poverty reduction (HEPR) program to bring all these efforts, as well as their resources under one umbrella. Many government programs have subsequently been consolidated under the HEPR national poverty program in order to better mobilize and coordinate antipoverty resources. Within this, the government implemented the 'National Target Program on Poverty Alleviation' between 1998 and 2000 and has recently prepared a 'Poverty Alleviation Strategy' for 2001-2010 (MOLISA 2001). These new initiatives do not appear to have entailed much change in policy focus or new funding from the central government. The policy areas have all been emphasized in the past and addressed by past programs and a variety of *ad hoc* schemes. New poverty mandates and targets are imposed on ministries by HEPR without the benefit of additional funding or reductions in other mandated responsibilities (van de Walle 1999, Nguyen The Dzong, 1999).

³ van de Walle (1999) provides more details.

Throughout all these programs, eligibility criteria, guidelines and norms are largely dictated by the center, while implementation is chiefly the responsibility of the communes. Poverty and needs are locally determined following national norms but heavily influenced by available local means and resources. Communes initially draw up lists of eligible candidates for the different social protection programs to reflect their needs.⁴ These are gathered, altered and eventually approved and passed on by the districts and the provinces to the center. Following a process of review and negotiation between a number of Ministries in Hanoi, transfers are made to the provinces.

III Data

The following analysis of Vietnam's safety net uses the nationally representative 1992/93 and 1997/98 Vietnam Living Standards Surveys (VLSS).⁵ These multi-topic household consumption expenditure surveys covered 4800 households spread across 150 communes in 1993, and 6000 households living in 194 communes in 1998. A panel of 4308 households is also contained in the surveys. In addition, a community questionnaire was administered in the communes in which the rural or small town households reside — 120 and 156 communes in 1993 and 1998 respectively.

The surveys contain numerous modules covering aspects of living standards.⁶ The 1998 survey contains considerably more information on government programs and policies than the 1993 survey. Since our interest in this paper is with the dynamic performance of transfer programs, the focus will be limited to transfer receipts for which a comparison can be made over time. These are education scholarships, social insurance and social subsidy funds.⁷ There are, of course, many other ways in which the government intervenes to increase social welfare — for example through subsidizing

⁴ The lists are of people or households depending on the program.

⁵ The 1992/93 survey spanned a full year starting in October 1992, while the 1997/98 survey began in December 1997 for lasted a year. For brevity's sake I will refer to the surveys as the 1993 and 1998 surveys respectively.

⁶ World Bank 1995 and 2000 provide detailed information on the surveys.

⁷ In 1998, details are also available on whether the household received transfers from the poverty alleviation fund or NGOs. The amounts involved are negligible.

micro-credit and various goods and disaster relief (MOLISA 1999). The survey does not allow an analysis of these schemes. Here the focus is on the main national transfer programs.

The welfare indicator is defined as annual per capita consumption, including the value of own production and the use value of consumer durables including imputed housing expenditures (World Bank 1995 and 2000). Consumption expenditures and other monetary amounts are expressed in real January 1998 national prices, taking account both of inflation through the survey year and of variation in prices spatially. Although the 1998 survey sought to improve the measurement of consumption in certain ways, the questionnaire also ensured that comparability across the two dates would be feasible. Two total consumption expenditure measures — namely, one which is the best possible measure for 1998 in terms of being the most comprehensive, and another which is made comparable to the 1993 expenditure totals — are therefore available. For all comparisons over time, the paper uses the inter-temporally comparable measures of consumption, but sticks with the best 1998 measure otherwise. The latter better captures tobacco consumption and the consumption value of own-produced non-food items such as coal, wood, and flowers.

IV Estimating behavioral responses to public transfers

Clearly, to determine whether programs reach the poor, the poor need first to be identified by an appropriate indicator of welfare without the programs. Measured outcomes will depend on that choice: the appearance of either good or bad targeting may just be due to deficient welfare measurement.

Studies of the incidence of public spending typically subtract the entire amount of government transfer receipts from household income or consumption to approximate pre-intervention welfare, and so rank the population into quintiles (say). Netting transfers out fully assumes that there is no replacement through savings, labor effort, schooling decisions, inter-household transfers and the myriad other potential household behavioral responses. That assumption is implausible. In general, because of behavioral responses (often given imperfect markets), the full benefits of transfers will not be passed onto consumption. The opposite assumption—treating post-transfer consumption as the

welfare indicator—is just as questionable. Ideally, one would like to subtract the intervention amount but add in the replacement income households would have had through their behavioral responses had they not benefited from the intervention.

The paper addresses these concerns by econometrically estimating the marginal propensity to consume out of social income (PCSI). This is then used to determine the net gain to consumption from social transfers and to construct the counterfactual consumption level without intervention. In the following analysis, transfers comprise social insurance, social subsidies and education scholarship receipts — the components of social income that can be identified from both surveys.

It is assumed that consumption of household i at time t ($t=1993, 1998$) (C_{it}) can be represented as an additive function of public transfers (T_{it}), observed household characteristics (X_{it}), and latent factors that are both time varying (d_t) and time invariant (h_i):

$$C_{it} = a + bT_{it} + gX_{it} + h_i + d_t + e_{it}, \quad (1)$$

where e_{it} is an error component that varies between households and overtime.

There are a number of potential problems with estimating b with this equation. An endogeneity concern arises due to the likely correlation between transfers and time invariant household characteristics ($\text{cov}(T_{it}, h_i) \neq 0$). This could result from purposive targeting to the long term poor. Another possible source of endogeneity arises if transfers are correlated with time varying determinants of consumption ($\text{cov}(T_{it}, d_t) \neq 0$ or $\text{cov}(T_{it}, e_{it}) \neq 0$). This would occur if transfers target those who suffered a shock or simply because of transfer eligibility changes, such as if a pension-receiving elderly household member dies. Some such changes may be observed in the data, others may not. A final issue relates to the possibility of heterogeneity of the behavioral response. Different household characteristics may lead to different PCSI for different households.

A double differencing model where all variables are expressed in first differences, purges the estimate of fixed effects and thus deals with the first source of endogeneity. Then equation (1) becomes:

$$\Delta C_{it} = b\Delta T_{it} + g\Delta X_{it} + \Delta d_t + \Delta e_{it} \quad (2)$$

Since there are only two rounds of data, the term Δd_t becomes an ordinary intercept term in a regression of the change in consumption on the change in transfers. This regression was initially run assuming that $g\Delta X_{it} = 0$ (characteristics don't change or don't have any effect), giving the standard "double difference" estimate of the consumption impact of transfers. This gives a **b** estimate of 0.45 with a heteroscedasticity and clustering-corrected *t*-statistic of 4.3 (Table 1). As discussed, this double difference estimate may still be contaminated through dependence of the change in transfers on time varying characteristics. A difference regression of transfers on characteristics attests to such a correlation, as can be seen in Table 1, column 2. The regression controls for changes in household size and composition—in particular, the number of members in the 0 to 6 and 7 to 16 age groups, the number of women and men over 55 and 60 respectively (the formal sector legal retirement age)—a change in the highest grade completed by the most educated member of the household, the change in the age and gender of the household head and finally a change in the language of interview.⁸ Transfers are found to respond significantly and negatively to increases in household size and to a change from Kinh to other interview language. Significant positive effects are found for increases in the number of small children, women aged over 55, the head's age and changing from a male to a female head.

The next regression in Table 1 therefore controls for changes in observable household characteristics in the double difference model of consumption as a function of transfers. Here too, changes in household size and in the language of the interview have a significant negative impact, while an older head and a higher educational level significantly influences consumption positively. In this case the **b** estimate is 0.37 (*t*=3.6). It is not significantly different from the initial simple double difference estimate.

This last estimate is fine as far as it goes, but a worry remains concerning omitted variables that may alter over time and affect transfers. For example, a severe shock that triggers a public response and affects household consumption may have occurred but not

⁸ Households had the option of being interviewed in a language other than the majority Kinh in both survey years. A change from Kinh is likely to signify a change in the ethnicity and Kinh language ability of the head of household.

be measured in the data. To deal with this problem, an instrumental variable is needed. A good instrument can purge any such latent effects by identifying an exogenous source of variation in the change in transfers.

One possible instrument for the change in transfers is transfer receipts in the first period. A high correlation is found between these variables (0.50). The instrument is then valid under the exclusion restriction that initial transfers are not correlated with the change in consumption appears plausible. The last OLS is re-estimated with the change in transfers instrumented by initial transfers. Here, the estimated \mathbf{b} is 0.72 ($t=3.7$). This is higher, but still not statistically significantly different from the first, naïve estimate. There is one cautionary note. The validity of the instrument could be questioned. The key untestable exclusion restriction is that transfers in 1993 do not appear on the right hand side of equation (1) (i.e. $\text{cov}(\varepsilon_{it}, T_{it-1}) = 0$). This would not hold if for example, the initial level of transfers helps prevent households from falling into destitution or succeeds in putting them on a different growth path.⁹

Finally, to test for possible heterogeneity in impacts, a simple OLS regression is run of the change in consumption against interactions between the change in transfers and household characteristics, as well as controls for time varying changes in characteristics and the change in transfers. Note that in a difference regression such as this, permanent income is effectively controlled for. As can be seen in Table 1, only two of the interaction terms is statistically significant. The change in transfers interacted with the number of men past retirement age is negative suggesting a lower impact of transfers on consumption in households with elderly men. This could indicate a reduction in work effort in response to the change in transfer receipts. The interaction of the change in transfers with the highest grade completed is positive suggesting that transfers have a higher impact on consumption in more educated households. This seems counter intuitive. However, two possible explanations come to mind. Controlling for other factors, better educated households may more accurately report data on consumption and transfers. Under this interpretation, the interaction is picking up data measurement

⁹ If another instrument was available, one could do an over-identification test, but there is no obvious candidate.

errors. Alternatively, a political economy factor may be at work, whereby more highly educated people believe that transfers will be more permanent. Nonetheless, a test of the joint significance of the interaction terms shows them to be insignificant ($F(1,150)=1.34$). Since the null hypothesis that they're all zero cannot be rejected, we shall go back to the previous specifications.

The preceding analysis suggests a range of estimates of the PCSI between about 0.3 to 0.7. However, none of the estimates were significantly different from the simple double difference estimate of 0.5. So, in the following analysis, consumption expenditures are net of half of the value of transfer receipts that can be identified, unless otherwise noted.¹⁰ Table 2 shows the sensitivity of quintile mean per capita expenditures and the incidence of mean per capita transfers across quintiles under different assumptions about the PCSI — namely fully including, including half only and fully excluding social incomes. Netting out transfers from the welfare indicator enhances the seeming progressivity of transfer incidence. This same pattern is observed in other countries and conforms to expectations.

V Testing a safety net: protection and/or promotion ?

As can be seen in Table 3, there was a clear expansion in the total outlays going to social welfare programs between 1993 and 1998.¹¹ As reported in the survey, mean overall real per capita amounts rose from 51,443 to 116,641 dong in 1998 prices, a 127 percent proportionate increase. The mean percentage of household expenditure represented by transfers rose from 3.3 to 4.5 percent.

How were the gains from this expansion in public outlays on transfers distributed? Did the expansion help protect people from poverty? Did it help promote people from poverty? A comparison of panel households over time can help answer these questions concerning the performance of the safety net. An important role for the public sector in a

¹⁰ Note that this means half of the total of scholarships, social insurance and subsidy funds for 1992/93 and half that same total plus poverty alleviation and NGO funds for 1998.

¹¹ Note that this refers only to programs — scholarships, social insurance and social subsidies — covered in both VLSSs. Although these do not account for all programs, they cover the bulk of social income receipts.

poor rural economy like Vietnam is to provide protection for those who are vulnerable to poverty due to uninsured shocks. As already noted, a static incidence picture is uninformative about whether transfers perform such a safety net function. And finding that the static incidence is not well-targeted, may indicate little about the responsiveness of outlays to poverty related shocks. There is evidence of considerable variability in amounts received from a given program in both 1993 and 1998 (van de Walle, 2001). There is also much instability over time in who gets transfers. For example, out of a total of 744 panel households who were beneficiaries of social insurance outlays in one of the two survey years, only 402 received them in both years. Similarly, of the 769 households who received social subsidy payments in one year, 111 were recipients in both years. Does this reflect a response to changing household circumstances on the part of the system? This section examines social welfare incomes from this perspective.

When using the panel to study the incidence of the changes in social income, there is a question of how one should rank households in deciding who is 'poor'. Table 3 ranks households by three different definitions of welfare, which can loosely be referred to as the “initial,” “new,” and “long-term poor;” the specific measures are per capita expenditures (net of half of transfers) in the initial period, the same in the later period and the mean over both years respectively. The table presents a comparison of mean per capita social income receipts in both years.

The proportional gains from expansion tend to be highest for the poorest quintile but neither decrease nor increase with expenditure across higher quintiles. However, among the “poor” in each of the three above senses, the “initial poor” clearly had the lowest absolute gains with a 122% proportionate increase in benefits for the bottom quintile and a 131% increase for the second lowest. The “new poor” had the highest proportionate gains (137% and 155% increase respectively), while the “long-term poor” fall somewhere in between (130% and 139%). Per capita transfer amounts increased for all groups but the percentage of the population receiving transfers declined slightly overall (22 to 20 percent), as did the proportion of the poor receiving them by all three definitions. The evidence does not suggest that the poor were specifically targeted by the program expansion.

Were changes in transfers responsive to poverty-related shocks? Table 4 presents

information on mean changes in transfers received by panel households classified into a three by three matrix. Households ranked into terciles of their initial 1993 level of per capita consumption (low, middle or high) are cross-tabbed against the change in their consumption between the two dates categorized into whether it underwent a fall, stayed more or less the same or rose significantly.¹² So, for example, 34 percent of those who were in the bottom third of the consumption distribution in 1993 and experienced a fall in their consumption over time, received transfers equal to about 111,901 dong per person in recipient households.

There is little sign that the system responded to consumption shocks. Indeed, the percentage of households who benefited from social incomes is relatively uniform across cells. Neither starting out poor, nor experiencing negative consumption shocks, appears to have elicited a response from social welfare programs. 32 percent of those who enjoyed the highest initial consumption and the highest gains to consumption were beneficiaries compared to 34% of the worst off in both respects. The per capita transfer amounts of participants tend to increase with initial welfare. Among the poor, those who suffered a drop in consumption saw the lowest gains in public transfers. However, there is some sign that public transfers helped compensate for drops in consumption among the high consumption group. Broadly speaking however, these specific programs appear fairly unresponsive to shocks.

Location may be an important factor in the determination of program participation (van de Walle 2001). Possibly the absence of a pattern in Table 4 arises from variation across geographical areas that is obscuring patterns within them. To test this, a linear probability model was estimated of whether transfers were received in 1998 against initial per capita consumption expenditures and the change in per capita consumption. This regression was run with and without commune effects. With commune effects, there is no sign of transfers responding either to initial consumption or to changes in consumption. Without commune effects, the results suggest that transfers respond perversely to initial consumption ($b=1.12e-8$, $t=2.52$) and not to shocks (similarly to

¹² Consumption in 1993 is net of half of transfers, while changes in consumption are net of half the change in transfers.

Table 4). This suggests that it is households in richer communes that primarily benefit from gains in transfers.

It is of further interest to examine what role transfers played in the impressive reduction in poverty that occurred over this period. The panel structure is now exploited to evaluate how well the safety net performed dynamically including how well it protected against poverty distinguished from how well it promoted out of poverty, following the approach proposed in Ravallion, van de Walle and Gautam (1995). In comparing joint distributions of consumption expenditures, such as with and without policy changes, the approach defines tests of a policy's ability to protect the poor (PROT) and its ability to promote the poor (PROM). The following summarizes the tests proposed in Ravallion et al., (1995).

In comparing joint distributions - such as with and without policy changes - two tests are used: how well people are protected from poverty, and how well they are promoted from poverty. To define these, let x denote the welfare indicator, found in the interval $(0, x^{max})$. Consider two possible joint distribution functions over dates 1 and 2, namely $F(x_1, x_2)$ and $G(x_1, x_2)$ (i.e., $F(x_1, x_2)$ is the proportion of the population with less than x_1 in period 1, and less than x_2 in period 2, and similarly for $G(x_1, x_2)$). The corresponding marginal distributions are $F_1(x_1) = F(x_1, x^{max})$ and $F_2(x_2) = F(x^{max}, x_2)$, and similarly for G . The poverty line is z , and so the proportion of the population who are poor in period 1 in the F distribution is $F_1(z)$, while a proportion $F_2(z)$ are poor at date 2. By construction, $F_2(z) - F(z, z)$ is the proportion of individuals in the F distribution who are poor in the second period but were not poor in the first. I will say that F protects from poverty better than G if and only if

$$F_2(z) - F(z, z) < G_2(z) - G(z, z)$$

The extent of protection allowed by F relative to G will be measured by

$$\text{PROT}(z) = G_2(z) - G(z, z) - F_2(z) + F(z, z) \quad (3)$$

Analogously, $F_1(z) - F(z, z)$ of the population were poor in the first period but not the second. F promotes the poor better than G if and only if

$$F_1(z) - F(z, z) > G_1(z) - G(z, z)$$

And the extent of promotion due to F relative to G will be measured by

$$\text{PROM}(z) = F_1(z) - F(z, z) - G_1(z) + G(z, z) \quad (4)$$

In all cases considered in this paper the marginal distributions in the first period are identical; $F_1(z)=G_1(z)$, which is simply the pre-intervention distribution. It follows that promotion is equivalent to requiring that $F(z,z) < G(z,z)$ i.e., PROM can be interpreted as a test of whether there is less persistent poverty in the F distribution, the persistently poor being defined as those who were poor in both periods. The residual, $F_2(z) - F(z,z)$, is then interpretable as the amount of transient poverty, which is precisely what PROT tests for.¹³

Table 5 presents the baseline joint distribution of consumption in the two years. Households are classified into four groups according to whether they were poor or non-poor in both years, and whether they escaped or fell into poverty over the period. There is evidence of a large fall in poverty: 26 percent of the population escaped poverty, 5 percent fell into poverty, 34 percent were persistently poor and 35 percent were never poor. This suggests considerable persistent poverty.

What is the effect of transfers on poverty? To answer this question, it is necessary to simulate the counterfactual joint distribution without transfers. As in static incidence calculations, this is done by subtracting half the transfers received in each respective year from consumption in that year. The simulated joint distribution is given in Table 6. Transfers are found to have negligible impact on poverty. Without them, one and two additional percent of the population would have been poor in 1993 and 1998 respectively. The measures of promotion and protection are not statistically significantly different from zero. Table 7 simulates the joint distribution had there been no changes in transfers between the two dates. The change in the proportion who fell into poverty identifies the degree of protection offered while the change in the proportion who escaped poverty indicates promotion. Changes enabled just over one percentage of the population to escape poverty, while they protected about one percent from falling into poverty. Again, these are not statistically different from zero. Low spending, low coverage and poor targeting together explain the negligible impact of transfers and changes in transfers on poverty.

¹³ Another implication of identical first-period marginals is that if both PROT and PROM are positive then $F_2(z) < G_2(z)$ (i.e., the incidence of poverty is lower for the F distribution in period 2), though the converse is not true (lower poverty in period 2 is possible with only one of PROT or PROM holding).

How much could better targeting improve impacts on poverty incidence? Table 8 compares the current distribution relative to a simulated uniform allocation of actual 1998 social income across the entire population. This would have a small but statistically significant additional impact on poverty: an additional 3 percent of the population (7 percent of the poor) under the actual allocation would escape poverty (s.e.=0.4%). Just over two percent of the non-poor would have fallen into poverty (s.e.=0.2%).

What if 1998 transfers were instead targeted based on an equal allocation to those below the poverty line only? The results in Table 9 show that outlays would be sufficient to bring 17 percent of the poor (7% of the population with a standard error estimate of 0.4%) out of poverty. Only 3 percent of the non-poor would have fallen into poverty (3% of the population with a s.e. of 0.2%).

Finally, going back to the concerns of Table 3, Table 10 presents the joint distribution of the incidence of proportionate gains in social incomes. When ranked by their 1998 welfare, large gains are again apparent for the non-poor. The new information here is that within the non-poor, the largest gains went to those who were initially poor. Once again, the evidence suggests very poor performance on protection.

VI Conclusions

Poverty fell quite dramatically in Vietnam between 1993 and 1998. This paper's analysis suggests that the government's safety net programs made only negligible contribution to that favorable outcome. There were both losers and gainers during this period. The paper's findings indicate that these programs did not fulfill a genuine safety net role in protecting those who faced falling living standards during this period. Part of the reason is low overall spending on these programs. However, the evidence also suggests that poor targeting is a fundamental problem on top of low total outlays.

The market economy has arguably increased the risks faced by households in Vietnam. Incomes from production and labor supply are probably more variable (though with higher mean) while local risk-sharing arrangements appear to have declined. This situation may well also lead to costly behavioral responses to mitigate and reduce risk. Vietnam may well find it increasingly difficult to sustainably reduce poverty in the future without concomitant efforts to provide more effective safety nets.

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Table 1: Estimating the propensity to consume out of transfers

	Consumption	Transfers	Consumption OLS	Consumption IV	Consumption
constant	827295.5 (14.09)	91469.6 (7.60)	764239.1 (12.95)	731514.9 (12.52)	757260.7 (13.01)
transfers	0.449 (4.33)	--	0.365 (3.63)	0.723 (3.65)	-1.610 (2.01)
h'hold size		-36778.6 (4.43)	-196493.5 (6.45)	-183335.6 (5.88)	-188184.8 (6.66)
# kids 0-6		42238.1 (4.39)	-54743.1 (1.40)	-69854.3 (1.77)	-60019.4 (1.55)
# kids 7-16		8979.2 (1.27)	299.7 (0.01)	-2912.7 (0.10)	-330.2 (0.01)
# females >55		76191.5 (3.47)	-233757.2 (0.43)	-51015.5 (0.95)	-88905.7 (1.55)
# males>60		48936.7 (1.56)	-54474.9 (0.60)	-71982.5 (0.80)	-75193.0 (0.85)
highest grade completed		-1523.0 (0.44)	32247.1 (2.34)	32792.0 (2.39)	40786.5 (3.03)
age of head		2495.1 (3.55)	7224.8 (2.25)	6332.1 (1.96)	7690.8 (2.35)
language of interview		-60851.4 (2.78)	-460466.8 (3.42)	-438696.5 (3.26)	-447277.7 (3.25)
gender of head		80669.7 (2.52)	74017.6 (0.83)	45157.1 (0.48)	71390.8 (0.83)
transfer*h'hold size					0.054 (0.33)
transfer*kids0-6					-0.144 (0.71)
transfer*kids7-16					-0.026 (0.18)
transfer*females >55					-0.384 (1.71)
transfer*males>60					-0.186 (0.97)
transfer*highest grade					0.117 (4.00)
transfer*age					0.017 (1.56)
transfer*lang					-0.022 (0.08)
transfer*gender					-0.020 (0.14)
R ²	0.011	0.036	0.058	0.051	0.077
RMSE	1.6e+6	3.7e+5	1.6e+6	1.6e+6	1.6e+6
Fstat	18.78	5.59	22.01	21.73	18.97
Prob>F	0.0000	0.0000	0.0000	0.0000	0.0000
n	4303	4275	4275	4275	4275

Source: 1993, 1998 VLSS

Note: T-ratios in parentheses are based on standard errors corrected for heteroskedasticity and clustering.

Regressions have a complete set of household fixed effects in the levels as the models were estimated by regressing differences on differences .

Table 2: Distribution of total transfers in 1998 under different assumptions about the propensity to consume out of transfers

Welfare indicator:	Per capita expenditures with transfers fully included		Per capita expenditures net of 0.5* transfers		Per capita expenditures net of transfers	
1998 Quintiles	mean pc expenditures	mean pc transfers	mean pc expenditures	mean pc transfers	mean pc expenditures	mean pc transfers
1	1,172,454	32,114	1,144,014	97,825	1,069,081	200,671
2	1,726,660	62,826	1,687,589	87,785	1,640,672	101,649
3	2,233,972	103,389	2,176,877	118,901	2,125,120	79,631
4	3,060,385	175,997	2,983,414	130,764	2,926,035	100,081
5	6,267,690	228,630	6,168,273	167,785	6,094,505	121,111
total	2,892,607	120,612	2,832,301	120,612	2,771,995	120,612

Source: 1998 VLSS

Note: Quintiles are formed by ranking the population by household per capita expenditures under the different assumptions of the propensity to consume out of social transfers. Transfers are those that can be identified in the 1998 VLSS—namely, social insurance and social subsidy funds, education scholarship, poverty alleviation and NGO funds.

Table 3: Changes in incidence over time

1992 social transfers				1998 social transfers		
	dongs per capita	% of household expenditures	% of population	dongs per capita	% of household expenditures	% of population
<i>How did the « initial poor » fare? :</i>						
1992 Net quintile:						
1	34,330	4.8	22.1 (775)	76,197	5.8	16.3 (775)
2	39,166	3.4	19.7 (830)	90,452	5.0	17.0 (829)
3	43,492	2.9	21.7 (850)	101,858	5.5	21.2 (850)
4	54,532	2.8	23.4 (895)	130,822	5.4	21.6 (891)
5	85,654	2.5	24.2 (958)	184,128	0.6	23.2 (958)
Total	51,443	3.3	22.2 (4305)	116,641	4.5	19.8 (4303)
<i>How did the « long-term poor » fare? :</i>						
Mean net quintile:						
1	35,041	4.6	24.2 (740)	80,468	7.1	16.5 (740)
2	32,952	2.8	19.4 (809)	78,878	5.1	17.9 (809)
3	50,290	3.6	21.3 (872)	117,442	6.0	22.2 (872)
4	58,657	3.0	23.8 (924)	139,395	5.5	20.5 (924)
5	77,257	2.5	22.5 (960)	166,996	1.5	22.0 (958)
Total	51,443	3.3	22.2 (4305)	116,641	4.5	19.8 (4303)
<i>How did the «new poor » fare? :</i>						
1998 Net quintile:						
1	38,652	4.1	23.0 (735)	91,545	3.2	17.6 (735)
2	35,299	3.1	21.8 (797)	89,965	5.8	18.1 (797)
3	51,934	3.5	22.7 (879)	114,218	5.6	22.3 (879)
4	50,131	3.0	21.0 (929)	116,325	4.3	19.3 (929)
5	76,857	2.9	22.6 (965)	171,121	3.4	21.8 (963)
Total	51,443	3.3	22.2 (4305)	116,641	4.5	19.8 (4303)

Source: 1993, 1998 VLSS.

Note: Quintiles are national population quintiles constructed based on per capita expenditures net of half of social transfers. The number of sample households in each quintile is given in parentheses. Dong amounts are expressed on a per capita basis across the quintile populations.

Table 4: The incidence of changes in transfers by initial consumption and changes in consumption over time

	Fall in consumption	Consumption stayed the same	Large rise in consumption
Low initial consumption			
% receiving	34%	27%	27%
transfer gain	111,901	246,476	241,658
n	80	506	848
Middle initial consumption			
% receiving	32%	30%	30%
transfer gain	408,469	251,619	296,513
n	240	422	772
High initial consumption			
% receiving	33%	36%	32%
transfer gain	481,618	343,329	367,991
n	496	221	720

Source: 1993, 1998 VLSS.

Note: The population is ranked into three equal groups based on 1993 per capita expenditures net of half of transfers and cross-tabbed against the level of their change in consumption over time net of half the change in transfers. The first number gives the percentage of households in the cell who received transfers in 1998. The second number gives the per capita amount of the change in transfers received by those with positive receipts only. The final number gives the number of households in the cell. Changes in transfers refer to changes in amounts received from social insurance, social subsidies and school scholarships.

Table 5: The baseline discrete joint distribution

1993	1998		total
	Poor	Non-poor	
Poor	33.54% (55.78)	26.58% (44.22)	60.12 100
Non-poor	4.84% (12.14)	35.04% (87.86)	39.88 100
total	38.38	61.62	100

Source: 1993, 1998 VLSS.

Note: The population is ranked into poor, non-poor groups based on actual per capita expenditures at each date and cross-tabbed. The first number in each cell gives the percentage of total population who were in that row's poverty group in 1993 and that column's group in 1998. The number in parentheses inside the table gives the proportion of each row's population that is in each column's group in 1998 or the transition probability.

Table 6: Joint distribution without transfers

PROT= 0.31(0.66); PROM= 0.70(0.74)

1993	1998		Total
	Poor	Non-poor	
Poor	35.21% (57.63)	25.88% (42.37)	61.09 100
Non-poor	5.15% (13.24)	33.76% (86.76)	38.91 100
total	40.36	59.64	100

Source: 1993, 1998 VLSS

Note: The population is ranked into poor, non-poor groups based on their simulated without transfer per capita expenditures (minus .5*transfers) at each date and cross-tabbed. z-scores in parentheses outside the table; critical values: 1.96 (2.58) at the 5% (1%) level.

Table 7: No change in transfers between 1993 and 1998

PROT= 0.36(0.76); PROM=0.69(0.73)

1993	1998		total
	Poor	Non-poor	
Poor	34.23% (56.94)	25.89% (43.06)	60.12 100
Non-poor	5.19% (13.02)	34.69% (86.98)	39.88 100
total	39.43	60.57	100

Source: 1993, 1998 VLSS.

Note: The population is ranked into poor, non-poor groups based on actual per capita expenditures for 1993 and the simulated 1998 distribution had there been no change in transfers (per capita expenditures in 1998 minus .5 of the change in transfers) and cross-tabbed. z-scores in parentheses outside the table; critical values: 1.96 (2.58) at the 5% (1%) level.

Table 8: Actual 1998 distribution versus uniform allocation of 1998 transfers

1998 actual	1998 simulated		total actual
	Poor	Non-poor	
Poor	35.54% (92.61)	2.83% (7.39)	38.38 100
Non-poor	1.54% (2.49)	60.09% (97.51)	61.62 100
total simulated	37.08	62.92	100

Source: 1998 VLSS

Note: The population is ranked into poor, non-poor groups based on actual per capita expenditures for 1998 and the simulated 1998 distribution had the five transfers identifiable in 1998 been distributed uniformly across individuals, and cross-tabbed.

Table 9: Actual 1998 distribution versus 1998 transfers targeted on equal per capita basis to the poor

1998 actual	1998 simulated		total actual
	Poor	Non-poor	
Poor	31.72% (82.66)	6.66% (17.34)	38.38 100
Non-poor	1.98% (3.21)	59.64% (96.79)	61.62 100
total simulated	33.70	66.30	100

Source: 1998 VLSS

Note: The population is ranked into poor, non-poor groups based on actual per capita expenditures for 1998 and the simulated 1998 distribution had the five transfers identifiable in 1998 been distributed per capita only to the poor and cross-tabbed.

Table 10: The incidence of proportionate changes in social incomes

1993	1998	
	Poor	Non-poor
Poor	102%	189%
Non-poor	54%	125%

Source: 1993, 1998 VLSS.

Note: The population is ranked into poor, non-poor groups based on their actual per capita expenditures at each date and cross-tabbed. The numbers give the percentage change in the three transfers between the dates.